



UNITED STATES PATENT AND TRADEMARK OFFICE

nh

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,992	01/20/2004	Elliott J. Straus	OMNZ 2 00014	1988
27885 7590 02/08/2007 FAY SHARPE LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			EXAMINER LUU, CUONG V	
			ART UNIT 2128	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/760,992

Applicant(s)

STRAUS, ELLIOTT J.

Examiner

Cuong V. Luu

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-10 are pending. Claims 1-10 have been examined. Claims 1-10 have been rejected.

The Examiner would like to thank the Applicant for the well-presented response, which was useful in the examination. The Examiner appreciates the effort to perform a careful analysis and make appropriate amendments to the claims.

Response to Arguments

1. Applicant's arguments, see p. 5, filed 11/9/2006, with respect to the U.S.C. 112, 2nd paragraph rejection of claim 9 have been fully considered and are persuasive. The U.S.C. 112, 2nd paragraph rejection of claim 9 has been withdrawn.
2. Applicant's arguments, see p. 5, filed 11/9/2006, with respect to the U.S.C. 112, 2nd paragraph rejections of claims 5 and 10 have been fully considered and are persuasive. The U.S.C. 112, 2nd paragraph rejections of claims 5 and 10 have been withdrawn.
3. Applicant's arguments filed 11/9/2006 regarding claim 1 have been fully considered but they are not persuasive. The applicant argues that Zuyev does not teach "fitting results obtained from a theoretical kinetic model to a metamodel of the cure time as a function of an initiator level and reaction temperature" because Zuyev fails to disclose or suggest such a process wherein the initiator level and the reaction temperature are used to obtain a kinetic model. The examiner respectfully disagrees with this argument. On p. 2, col. 2, paragraph 5, lines 6-16 of the paragraph, Zuyev recites, "This data is used to develop a mechanistic model to represent reaction rate as a function of temperature and initiator level (Step (2)). We used

one of the models developed by Stevenson [12] as simplified by Lee [13]. The curing stage during IMC can be assumed isothermal due to the very small coating thickness. The equations describing the cure of IMC are given in the appendix." In the section Appendix A on page 3, col. 1 of the page, and paragraph 1 of the section, Zuyev recites, "In order to model the IMC cure we used Lee's modification [9] to Stevenson's [8] general kinetic model for free radical polymerization that relates to the type and concentration of ingredients and reaction temperature." From these recitations Zuyev clearly teaches a kinetic model represents cure time or rate as a function of temperature and initiator level. Consequently, Zuyev does teach fitting results, which are data obtained from a kinetic model to a metamodel of the cure time as a function of an initiator level and reaction temperature. Claim 1, therefore, remains rejected. As a result, claims 2-5 remain rejected.

4. Applicant's arguments filed 11/9/2006 regarding claims 7-9 have been fully considered but they are not persuasive. The applicant argues that since Zuyev does not teach the limitation fitting results obtained from a theoretical kinetic model to a metamodel of the cure time as a function of an initiator level and reaction temperature in claim 1, claims 7-9 should be allowable. As discussed in item 3, Zuyev does teach the limitation, so claims 7-9 remain rejected.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Art Unit: 2128

Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention does not recite a tangible result.

5. As per claims 1 and 6, the Examiner respectfully submits, under current PTO practice, that the claimed invention does not recite a tangible result and is merely drawn to a manipulation of abstract ideas. The claim is not tangible because the results of the final step of the method are not used in such a way to make them tangible such as displaying to users or storing for later usage.
6. Claims 2-5 and 6-8 respectively inherit the defectives of claims 1 and 6.

Claims 5 and 10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter, program per se.

7. As per claims 5 and 10, they are rejected under 35 U.S.C. 101 because the claimed inventions are directed to claiming program per se. They claim instructions for carrying out the method contained in computer readable medium, and instructions here are regarded as programs.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

Art Unit: 2128

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Zuyev et al (Optimizing Injection Gate Location and Cycle Time for the In-Mold Coating (IMC)

Process, ANTEC 2001. Since pages are not numbered, for the purpose of examining, the examiner numbers them from 1 for the first page to 5 for the last page and columns 1 and 2 for each page) herein Zuyev.

1. As per claim 1, Zuyev teach a method for minimizing the cure time of a thermoset in-mold coating for a molded article, said method comprising the steps of:

Gathering information on the reactivity of said thermoset (p. 2, col. 2, paragraph 5, lines 1-3 of the paragraph);

Using said information to develop a theoretical kinetic model representing a cure rate of said thermoset as a function of temperature and an initiator level in the coating (p. 2, col. 2, paragraph 5, lines 6-16 of the paragraph; page 3, Appendix A, col. 1 of the page, and paragraph 1 of the section);

Fitting results obtained from said theoretical kinetic model to a metamodel of the cure time as a function of an initiator level and reaction temperature (p. 2, col. 2, paragraph 5, lines 6-16 of the paragraph; p. 3, col. 1, paragraph 3)); and

Minimizing said cure time using said metamodel for a minimum specified flow time (p. 2, col. 2, paragraph 4).

2. As per claim 2, Zuyev teach said theoretical kinetic model is a free radical based kinetic model (p. 3, col. 1, paragraph 9).

3. As per claim 3, Zuyev teach said step of gathering information on the reactivity of the thermoset being performed by conducting differential scanning calorimetry scans on said thermoset (p. 2, col. 2, paragraph 5, lines 3-4 of the paragraph).
4. As per claim 4, Zuyev teach said kinetic model being used to generate flow time and cure time of said thermoset as functions of mold temperature and initiator level in said thermoset.
5. As per claim 5, Zuyev teach instructions for carrying out said method being contained in computer readable medium format (p. 1, col. 2, paragraph 3. Mentioned CAD software to carry out the method inherits this limitation).
6. As per claim 6, Zuyev teach a method for optimizing the location of an in-mold coating injection port in a mold so as to minimize the flow time for an in-mold coating to flow over at least a part of a molded article, said method comprising the steps of:
 - Predicting a coating fill pattern in said mold (p. 1, col. 2, paragraph 5, lines 6-8); and
 - Using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating to flow over at least a part of a molded article and to reduce the presence of surface defects of said coating (p. 2, col. 1, paragraph 2).
7. As per claim 10, Zuyev teach instructions for carrying out said method being contained in computer readable medium format (p. 1, col. 2, paragraph 3. Mentioned CAD software to carry out the method inherits this limitation).

Art Unit: 2128

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuyev as applied to claim 6 above and further in view of Chen et al (In-Mold Functional coating of Thermoplastic Substrates: Process Modeling, Antec 2001. Since pages are not numbered, for the purpose of examining, the examiner numbers them from 1 for the first page to 5 for the last page and columns 1 and 2 for each page) herein Chen.

8. As per claim 7, Zuyev do not teach said step of predicting a coating fill pattern in said mold being performed by determining the relation between a pressure in said mold and a flow rate of said coating.

Chen teaches this limitation (p. 2, col. 2, paragraph 5 and the last 2 lines of this col.; p. 3, col. 1, lines 1-2).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev and Chen. Chen's teaching would have developed mathematical models to predict the injection pressure needed to inject the coating (p. 1, col. 2, the last 2 lines; p. 2, col. 1, line 1).

Art Unit: 2128

9. As per claim 8, Zuyev do not teach said step of predicting a coating fill pattern in said mold being performed by determining the relation between a pressure in said mold and a coating thickness on said substrate.

Chen teaches this limitation (p. 2, col. 1, paragraph 6, lines 1-5 of the paragraph).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev and Chen. Chen's teaching would have achieved a more uniform coating thickness (p. 2, col. 2, paragraph 3, lines 4-7).

10. As per claim 9, these limitations have already been discussed in claims 7 and 8. They are, therefore, rejected for the same reasons.

Conclusion

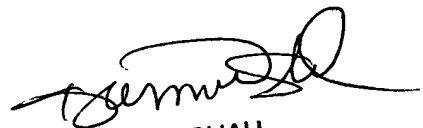
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cuong V. Luu whose telephone number is 571-272-8572. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah, can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. An inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

Art Unit: 2128

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CVL



KAMINI SHAH
SUPERVISORY PATENT EXAMINER